

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A packet forwarding system, comprising:
 - an input unit for inputting first data in units of transmission;
 - a packet memory management unit for assembling the input first data into an Internet Protocol (IP) packet and loading the IP packet into a packet memory, and reading out an IP packet header and a pointer of an IP packet trailer connected to the IP packet header;
 - a header processing unit for deciding a packet classification and a transmission destination by using the IP packet header provided from the packet memory management unit, and reporting to the packet memory management unit the pointer of the IP packet trailer to be connected to the IP packet header; and
 - an output unit for dividing the IP packet header and the IP packet trailer into second data in said units of transmission, receiving the IP packet header ~~being transmitted directly~~ from the header processing unit, reading the IP packet trailer ~~being read directly~~ from the packet memory of the packet memory management unit ~~and based on~~ the reported pointer of the IP packet trailer to be connected to the IP packet header, and outputting the second data to a channel.
2. (previously presented): The packet forwarding system as claimed in claim 1, wherein the packet memory management unit includes:

a packet generator for generating the IP packet from the input first data;

the packet memory comprising plural buffers loading the IP packet, and the plural buffers storing buffer attribute information and the pointer of the IP packet trailer connected to the IP packet header;

a transmission header queue for loading a pointer of the IP packet header corresponding to a transmission order of the IP packet; and

a controller for reading from the packet memory the IP packet header and the pointer of the IP packet trailer connected to the IP packet header, according to the transmission order determined by the transmission header queue, and transmitting the pointer of the IP packet trailer and the IP packet header to the header processing unit.

3. (previously presented): The packet forwarding system as claimed in claim 2, wherein the controller, if the IP packet header and the pointer of the IP packet trailer connected to the IP packet header are re-transmitted from the header processing unit, reads the IP packet trailer connected to the IP packet header from a buffer corresponding to the pointer of the IP packet trailer, and transmits the IP packet trailer to the output unit.

4. (original): The packet forward system as claimed in claim 2, wherein the controller verifies whether a different IP packet trailer connected to the IP packet trailer exists by using the buffer attribute information corresponding to the pointer of the IP packet trailer, and, if the different IP packet trailer exists, reading and transmitting the different IP packet trailer to the output unit.

AMENDMENT UNDER 37 C.F.R. § 1.114(c) and STATEMENT OF SUBSTANCE OF
INTERVIEW

Application No.: 10/777,150

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5. (original): The packet forwarding system as claimed in claim 2, wherein the buffer attribute information includes a front pointer of a front buffer connected to a front of the buffer and a rear pointer of a rear buffer connected to a rear of the buffer, and information on whether a different IP packet trailer connected after the IP packet trailer, exists.

6. (currently amended): A packet forwarding method, comprising:
inputting, by an input unit, first data in units of transmission;
a packet memory management step of generating, by a packet memory management unit, the input first data into an Internet Protocol (IP) packet and loading the IP packet into a packet memory, and reading out and sending an IP packet header and a pointer of an IP packet trailer connected to the IP packet header;

a header processing step of deciding, by a header processing unit, a packet classification and a transmission destination by using the IP packet header provided from the packet memory management unit, and reporting to the packet memory management unit the pointer of the IP packet trailer to be connected to the IP packet header; and

an output step for dividing, by an output unit, the IP packet header and the IP packet trailer into second data in said units of transmission, for receiving the IP packet header ~~being transmitted directly~~ from the header processing unit, for reading the IP packet trailer ~~being read directly~~ from the packet memory of the packet memory management unit ~~and based on the~~ reported pointer of the IP packet trailer to be connected to the IP packet header, and outputting the second data to a channel.

7. (currently amended): The packet forwarding method as claimed in claim 6,
wherein the packet memory management step includes steps of:

assembling the input first data into the IP packet;

loading the IP packet into plural buffers, the plural buffers storing buffer attribute
information and the pointer of the IP packet trailer connected to the IP packet header;

reading the IP packet header and the pointer of the IP packet trailer connected to the IP
packet header according to a transmission order, and transmitting the pointer of the IP packet
trailer and the IP packet header to the header processing unit.

8. (currently amended): The packet forwarding method as claimed in claim 7,
wherein the packet memory management step further includes a step of, if the IP packet header
and the pointer of the IP packet trailer connected to the IP packet header are re-transmitted from
the header processing unit, reading the IP packet trailer connected to the IP packet header from a
buffer corresponding to the pointer of the IP packet trailer, and transmitting the IP packet trailer
to the output unit.

9. (currently amended): The packet forward method as claimed in claim 7, wherein
the packet memory management step verifies whether a different IP packet trailer connected to
the IP packet trailer exists by using the buffer attribute information corresponding to the pointer
of the IP packet trailer, and, if the different trailer exists, reading and transmitting the different IP
packet trailer to the output unit.

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10. (original): The packet forwarding method as claimed in claim 7, wherein the buffer attribute information includes a front pointer of a front buffer connected to a front of the buffer and a rear pointer of a rear buffer connected to a rear of the buffer, and information on whether the different IP packet trailer connected after the IP packet trailer exists.

11 - 14. (canceled).